

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 71S0522.WO26	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/IT 02/00621	International filing date (day/month/year) 30.09.2002	Priority date (day/month/year) 30.09.2002
International Patent Classification (IPC) or both national classification and IPC B28B11/00		
Applicant [SYSTEM S.p.A.] RonFlette S.A.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I Basis of the opinion
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 10.09.2003	Date of completion of this report 03.01.2005
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Orij, J Telephone No. +31 70 340-4563



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International application No.

PCT/IT 02/00621

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-6 as originally filed

Claims, Numbers

2-5 as originally filed
1, 6 received on 26.07.2004 with letter of 21.07.2004

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.: 7
- the drawings, sheets:

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5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).
(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-6
	No: Claims	
Inventive step (IS)	Yes: Claims	1-6
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

D1: EP-A-1 162 047 (RONFLETTE S A) 12 December 2001 (2001-12-12)
D2: US-A-4 753 163 (BLAAK CORNELIS) 28 June 1988 (1988-06-28)

2.1 The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document) an apparatus for distributing powders on a support (2) in a predetermined pattern, comprising: a belt conveyor (1) for transporting the support (2); a head for applying the powders (3), located above the conveyor (1) which head (3) comprises a ring-wound closed continuous belt (4) exhibiting a plurality of perforations arranged according to a predetermined pattern, which perforations are of a size which enables passage of predetermined quantities of powders (claim 1); means for controlling a supply and delivery of powders through the perforations (37, column 3, lines 7-10) and for keeping the continuous belt (4) clean (column 3, lines 15-19); means for controlling a movement of the continuous belt (4) in synchrony with a movement of the conveyor (column 3, lines 20-29), a hopper (7,27; column 2, line 57 - column 3, line 6) located at a short distance above the continuous belt (4); the hopper (7,27) exhibiting an outlet mouth which is transversally arranged with respect to the advancement direction of the continuous belt (4) and the conveyor (1), and which is delimited, perpendicular to the advancement direction of the continuous belt (4) and the conveyor (1), by a front edge and a back edge (claim 7; figure 2 insert).

The subject-matter of claim 1 differs from this known powder distributing apparatus in that said means for controlling a supply and delivery of powders through the perforations and for keeping the continuous belt clean comprise:

- a fixed upper doctor which operates at the front edge and which is pressed against an upper face of the continuous belt by an elastic element;
- a fixed lower doctor which is pressed against a lower face of the continuous belt and exerts thereon an antagonistic action to an action exerted by the fixed upper doctor;
- an adjustable doctor which operates at the front edge and is pressed against the upper face of the continuous belt and is arranged opposite to and antagonistically to the fixed upper doctor; the adjustable doctor being

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adjustable by sliding in a perpendicular direction to the back edge and the front edge in order to regulate an aperture of the outlet mouth of the hopper.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

2.2 The problem to be solved by the present invention may be regarded as how to adjust the amount of powders deposited by free fall through the perforations of the belt on the underlying support (description page 6, last paragraph).

Although document D2 teaches a closure strip able to adjust the passage gap of the squeegee device (column 4, lines 22-27), it does so in the opposite rotational direction of the continuous belt and is used for pressing a viscous substance through the perforations of the continuous belt.

The solution to this problem proposed in claim 1 of the present application is neither known, nor suggested by the available state of the art. The subject-matter of claim 1 is therefore considered as involving an inventive step (Article 33(3) PCT).

2.3 Claims 2-6 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

3 The subject-matter of claims 1-6 is considered as susceptible of industrial application (Article 33(4) PCT).

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Claims.

- 1). An apparatus for distributing powders on a support in a predetermined pattern, comprising: a belt conveyor (2) for transporting the support (3); a head for applying the powders (1), located above the conveyor (2), which head (1) comprises a ring-wound closed continuous belt (4) exhibiting a plurality of perforations arranged according to a predetermined pattern, which perforations are of a size which enables passage of predetermined quantities of powders; means for controlling a supply and delivery of powders through the perforations and for keeping the continuous belt (4) clean; means for controlling a movement of the continuous belt (4) in synchrony with a movement of the conveyor (2).
- 2). The apparatus of claim 1, wherein the continuous belt (4) is not made of a textile material and does not present any unevenness in a thickness thereof.
- 3). The apparatus of claim 1 or 2, wherein the continuous belt (4) at sides thereof exhibits slots (40) for drawing, which slots (40) are arranged in longitudinal rows parallel to a longitudinal axis of the continuous belt (4).
- 4). The apparatus of claim 1 or 3, wherein the continuous belt (4) is partially wound on a plurality of rollers (10, 11, 12, 13) having parallel axes which are arranged transversally to an advancement direction of the continuous belt (4) and the conveyor (2).
- 5). The apparatus of claim 4, wherein a roller (10) of the plurality of rollers (10, 11, 12, 13) is a drive roller and draws the continuous belt (4) in motion, and is equipped with radial projecting pins (14) which engage in the slots (40); the drive roller being located downstream, with reference to the advancement direction of the continuous belt (4) and the conveyor (2), of the means for controlling a supply and delivery of powders through the perforations and for

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keeping the continuous belt (4) clean.

6). The apparatus of claim 5, wherein the means for controlling a supply and delivery of powders through the perforations and for keeping the continuous belt (4) clean comprise: a hopper (5) located at a short distance above the continuous belt (4); the hopper (5) exhibiting an outlet mouth which is transversally arranged with respect to the advancement direction of the continuous belt (4) and the conveyor (2), and which is delimited, perpendicular to the advancement direction of the continuous belt (4) and the conveyor (2), by a front edge (50) and a back edge (51); a fixed upper doctor (6) which operates at the front edge (50) and which is pressed against an upper face of the continuous belt (4) by an elastic element (9); a fixed lower doctor (8) which is pressed against a lower face of the continuous belt (4) and exerts thereon an antagonistic action to an action exerted by the fixed upper doctor (6); an adjustable doctor (7) which operates at the front edge (51) and is pressed against the upper face of the continuous belt (4) and is arranged opposite to and antagonistically to the fixed upper doctor (6); the adjustable doctor (7) being adjustable by sliding in a perpendicular direction to the back edge (51) and the front edge (50) in order to regulate an aperture of the outlet mouth of the hopper (5).

7). The apparatus of claim 6, wherein at least the fixed upper doctor (7) and the fixed lower doctor (8) are elastically deformable.